

# Substitute Specification

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**Circuit for turning on and operating units connected to their supply voltage in series in a control and data transmission installation**

## Cross-References to Related Applications

Not applicable.

## Statement Regarding Federally Sponsored Research or Development

Not applicable.

## Background of the Invention

[0001] The invention relates to an apparatus for modules connected to the supply voltage in series in a control and data transmission installation, in particular for bus users in an automation bus system...

## Technical Field

[0002] Modules in a control and data transmission installation, i.e. electrical components and units used in the design of an automation bus system, for example, are frequently connected to the supply voltage in series with one another. For this purpose, the units generally have a supply voltage input and a supply voltage output associated with the latter, this supply voltage output being connected to the supply voltage input of the next unit. If an individual unit in a number of units connected in series in this manner contains a short circuit, the supply voltage collapses generally for all the units, or the entire chain of units or modules cannot be started up, because the power supply unit reduces its output voltage on account of the short circuit, which means that the operation of individual units becomes an uncertainty. In addition, fault diagnosis is not possible, since none of the units are operational. The faulty unit can be ascertained only by removing all the units from the series circuit and starting them up individually.

OK to enter. JB 06/27/2005